

WE CLAIM

1. A fluid transport apparatus, comprising:
a transport channel including a fluid inlet; and
an evaporator including at least one evaporator channel arranged to receive
5 fluid, each evaporator channel having at least one open fluid outlet operable to
evaporate fluid at the at least one fluid outlet so as to cause the flow of fluid through
the transport channel.
- 10 2. The fluid transport apparatus as claimed in claim 1, wherein the transport
system is a chromatographic system and the transport channel includes a separation
channel.
- 15 3. The fluid transport apparatus as claimed in claim 1, wherein the evaporator
includes a gas conditioner for conditioning the gas at the at least one fluid outlet.
4. The fluid transport apparatus as claimed in claim 3, wherein the gas conditioner
comprises a gas flow unit for maintaining a gas flow over the at least one fluid outlet.
- 20 5. The fluid transport system as claimed in claim 1, wherein the evaporator
includes a heater for raising the temperature at the at least one fluid outlet.
6. The fluid transport system as claimed in claim 1, wherein the evaporator
includes a cooler for controlling the temperature at the at least one fluid outlet.
- 25 7. The fluid transport apparatus as claimed in claim 1, wherein the evaporator
includes a plurality of fluid outlets.
8. The fluid transport apparatus as claimed in claim 1, wherein at least one of the
at least one channel of the evaporator is branched.

9. The fluid transport apparatus as claimed in claim 1, wherein the evaporator includes a plurality of channels.

5 10. The fluid transport apparatus as claimed in claim 1, wherein the transport channel has a width of less than 20 micrometers.

11. The fluid transport apparatus as claimed in claim 1, wherein the transport channel has a depth of less than 20 micrometers.

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12. The fluid transport apparatus as claimed in claim 1, wherein the fluid transport system acts on a fluid comprising an operating fluid.

13. The fluid transport apparatus as claimed in claim 12, wherein the operating
15 fluid comprises water.

14. The fluid transport apparatus as claimed in claim 12, wherein the operating fluid comprises acetonitrile, methanol, standard mixtures for chromatographic systems or organic solvents.

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15. The fluid transport apparatus as claimed in claim 1 comprising two plates between which said transport channel and said evaporator channel are formed.

16. The fluid transport apparatus as claimed in claim 15, wherein at least one of
25 said plates is formed of one of glass silicon, poly-di-methyl-siloxane and other polymeric material.

17. A high pressure liquid chromatography (HPLC) apparatus comprises the transport apparatus of claim 1.

18. The high pressure liquid chromatography (HPLC) apparatus of claim 17, wherein the HPLC apparatus is an open tubular HPLC system.

5 19. The high pressure liquid chromatography (HPLC) apparatus of claim 17, wherein the HPLC apparatus contains a packed bed.

20. The high pressure liquid chromatography (HPLC) apparatus of claim 17, wherein the HPLC apparatus contains a porous monolith.

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21 A fluid transport method comprising the steps of:

introducing a fluid to a fluid inlet of a transport channel, the transport channel being in fluid communication with at least one evaporator channel of an evaporator, each evaporator channel having at least one open fluid outlet; and

15 evaporating fluid at the at least one fluid outlet so as to draw the fluid through the transport channel.